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I'm going to talk about trends we're starting to see in managing electronics waste. Before I start, I just want to say, I'm really excited about this, because in my job at EPA, I manage a voluntary program that encourages industry partnerships to create opportunities for consumers to recycle their electronics. This is an area that's close to my heart, and I think that we see a lot of interesting issues here, and I think if we can overcome them, then our chances of safe recycling increasing and getting consumers to think differently about the products that they purchase and how to get rid of them, I think that'll increase significantly.

So I'll take you on a short journey as to some of the experiences that we've seen in the U.S. when it comes to collecting this stuff. When we approach electronics management in our office here, we have one goal when it comes to collection: to make recycling your electronics as easy as it is to buy them. A very difficult challenge, and what we do is try to do is incorporate all of the different types of sectors that you would encounter, the consumer sector, the online sector, really try to engage all of those to make that easy, but that's our big picture goal. We're not there yet.

I'm going to discuss some issues in getting consumers to participate, issues in costs, and some of the trends that we're seeing moving forward, so to start off with, what are we seeing when it comes to how do we get consumers to participate? What are some of the challenges there? One of the things that we've seen is that it makes it difficult for consumers to participate in a collection event if they don't know when it's happening, where it's happening, and how often it's happening. So in developing a program, it's important to have predictable times and locations, which doesn't necessarily mean that you have to have a program that's ongoing every day, but if a consumer knows, okay, every Friday of the month from 10-4, or from 7-9, I can go and drop off my electronics, it's going to increase consumer participation. The other thing is, we have to make these options convenient. Is this going to be a collection that's going to be easy for consumers to get to? And I think, what we've seen in the U.S., we have so many different kinds of, as is here in Mexico as well, different cities, is it rural, is it suburban, is it urban, where are the waste management depots located? So when we think about convenient, convenient for rural is not necessarily going to be the same thing as convenient for urban. Is the site in commonly visited locations? One of the things that we've found in the state of Montana, Montana is a very rural state, it's in the northern part of the country, it's near the Canadian border, and the state of Montana came to us two years ago and said, "We'd like to start up a collection event. How do we do this?" And so we worked with some of the manufacturers, which I'll discuss in later slides to devise some programs for them, and what we found was that, for most of the residents in that state, driving 20 miles to the waste collection site is something that they did often, maybe, you know, twice a month or so, but you ask somebody in an urban environment, myself, I grew up in a city, I wouldn't probably do that. So when we are thinking about collection programs, locally specific and locally appropriate is really, really important.

Also, what we're seeing is a variety of different kinds of programs that might occur, and they might be used together, so for example, you can have these ongoing collection sites, you can have some of the one day recycling events that Mike just discussed, and you can have something what we're seeing, retailer take back, and I get really excited about this, because here in Mexico, do you have Wal-Mart? Do you all have Wal-Mart? What about Staples? Does that sound familiar? Office Depot? Okay, so Office Depot just started a program, they announced it in October in the U.S. where you buy a box for 5, 10, or 15 dollars, you shove all your televisions, computers, whatever you can there, and you bring it back to the store, and Staples has a very similar type of store, and you do the same thing, and so that is where you're asking the consumer to pay some money, they come, they drop it off in a box, and the retailer takes care of it, and what the retailer has done is has created these back end logistic systems with recyclers to take this material to a centralized location to recycle it.

We're also seeing the kind of mailback program that Mike (Rowan) just discussed with Dell, we spoke with Dell, and they, I believe, have a program here in the Tijuana area, or at least in Mexico, that they're going to be doing for consumers, where you can download a label off of Dell's website and find a box and mail it back. Now, and that would be free of cost if you're mailing back an old Dell product. And what we're seeing in our experience as far as many of these programs are really new, and we're excited to see them, but at the same time, we don't know which ones work best yet, and so I think a combination of programs, and one more example, I mentioned Montana, how they, you know, wanted to have collection systems for their consumers, well what they've done is they've now pointed their consumers to Staples' program, to this retailer program, to supplement, sort of complement what it is that they have going on at the state level, so it's a nice way of working with partnerships with industry or with other kinds of collection systems, and to make consumers aware of all their different options. So we're continuing with how do we get consumers to participate? It's got to be low cost and affordable. We are testing to see if the \$10 box at Staples or these, \$5 at Office Depot is going to be something that consumers will take advantage of. So it has to be something that they can afford, and that they will do more than once. In some cases, we've seen that we need some consumer incentives. Here in Tijuana, do you have Best Buy? It's an electronics retailer, so it sells like televisions and stereos and computers, and they have often hosted one-day collection events, and they've given coupons to consumers, so that's something else to keep in mind. And don't be afraid to ask. If you're creating local collection programs or systems, sometimes if you approach retailers and ask them for these incentives, then that might be a good thing to include.

Increase consumer awareness. I can't stress this enough. Consumers need to understand why, why should I go? Why should I recycle? Why do I care? They say that, with a consumer, you have to send a message 7-12 times before they actually, it becomes part of their thinking, and they're bombarded with so many messages a day with media and with advertising, how do you make it compelling for consumers to recycle? And also, keeping in mind that there's different infrastructure for different products. You'll notice up there where it says "Recycle your cell phone, it's an easy call," that is a campaign that we are going to launch in January with the cell phone recycling industry. Reason being, in the U.S., the cell phone retailers all have collection systems as well as many of the manufacturers. So as we put these things together, we say, all right, well there's an infrastructure that exists. Now we have to tell consumers about it.

When I was discussing issues in collection, I was focusing on the individual. Understanding, though, that business is different. We see that the collection needs for small business is either that they're going to need a pickup from a recycler, or they're going to need to drop something off at a municipal or local location in order for them to be able to recycle their electronics. A larger business is not going to have that capability, and they're going to need to work with recyclers to have the material picked up directly. At the bottom, you'll notice that it says recycling or reusing used electronics can be incorporated into lease agreements or contracts, so if you're working with large companies, we strongly encourage the contracts to read so that the company that's offering the computers, in this case, that there's a mechanism that they work with a recycler to take those back when you're ready to replace them. Reverse logistics opportunities and deliveries, what this means is, if you have, let's say you're a small business, and you're ordering supplies from Office Depot, could the trucks that Office Depot has come to your business, and instead of leaving empty, can they take the equipment with them. So it's understanding the kinds of service and delivery systems that are working with businesses and to see, are there opportunities for using them on the reverse end to take back electronics.

One thing that is challenging, and I know Bob (Tonetti) and a few other folks are going to talk about safe recycling in just a moment this afternoon, but there's a lot of uncertainty in choosing safe environmentally friendly recyclers. What does it mean to be environmentally friendly? I'm a small business, I don't have the time to do an audit, how do I find the right kind of recycler? You won't really find many of these issues with large businesses, because the larger businesses might have the funds or the means to be able to seek safe recycling services, but for companies that aren't really certain as to what to do, that particular, the cost and also the time to do the due diligence may be a hindrance. But when we look at the incentives for recycling, Bob (Tonetti) mentioned RCRA, which is the law that we have in the U.S., some hazardous waste management requirements, at least for businesses, it's illegal for them to throw into a garbage can a certain number of electronics, so that might create incentives for them to say, "Okay, well I can't throw it

out, and I don't want to pay to have it managed as electronic waste, can I work with a recycler to recycle it?" So just keeping in mind business and individual consumer issues are different. Finally, I'll get to issues and collection costs. This is where everybody asks me, well, how much will I get paid for the electronics I want to sell? Well, it might actually cost you some money to recycle it. We find that, if you're going to do a collection event, those tend to be very expensive, because you have to account for labor costs, you have to account for trucks, the transportation, the management on site, any permits that you might need to get, so one of the questions to ask is how can these collection systems become more efficient? Collecting in bulk, again, as I just mentioned, using reverse logistics, does it make sense to have all of the electronics go to one location, so when we think about these retailer collection initiatives that we mentioned that Office Depot has, how do they do it on the back end? Do they send everything back to one distribution center and then have it collected? That might make more sense. Also, we find that with many of the collection events that we do hear from, a lot of them will say, "Okay, but no televisions. We'll take computers, but no televisions," and it's because televisions are expensive, they're expensive to recycle, they're expensive to haul, and there isn't as much value in the commodities for them as there are for computers, so the resale value is very low. And then administrative costs. I was reading, I don't know if any of you are familiar with E-Scrap News magazine, in the April 2008 edition, they describe how, in the California and Maine systems, there are various different administrative costs from a recycling standpoint, so you know, do you have to, what are some of the paperwork that you as a recycler would have to do, and that you as a collector would have to do for collection systems? So just keeping in mind record keeping, administrative costs can weigh up as well.

So now I'll circle back to trends that we see in collection systems in the U.S. When I spoke with some of the different states that we work with, as well as looking at surveys of the experiences that we're seeing in California, Maine, but also in the non-regulated states, as Bob mentioned in his presentation, he was talking about the federal approach, but mentioning that there were also different state approaches. We're finding that collection events are increasing in frequency with longer collection times, which is a really good thing, as I mentioned earlier. We need to have those collection times be predictable, and fees are stabilizing or decreasing. What I mean is, in most collection programs, you might still see a cost of \$30-35 to recycle a large, large television, like a big console television, but the fees are not necessarily going up, and the question is, can those fees remain at a point where consumers will actually take advantage of them? And as I mentioned also, with televisions, a lot of times, different collection programs might say, okay, well I'm going to, in order for me to make this profitable, or at least make this worth my while, I'm going to limit the scope of products that I take, mainly, computers. So it's a bit difficult for televisions, but at least for computers, we're starting to see an infrastructure that is growing. And I mentioned these industry partnerships, and I know Mike (Rowan) discussed the Dell/Goodwill partnership.

Who's also familiar with the Waste Management company? Waste Management is a big recycler in the U.S., and they have a footprint of 800 locations across different states, across the U.S. where people come and bring their recyclables. So what Sony did was develop a partnership with waste management to be able to, for a consumer to be able to take any Sony branded product to certain locations, with waste management, and it would be recycled for free. So other companies we know are thinking about that model, and also engaging with that particular program, but we're starting to see these kinds of partnerships come up to supplement the municipal and local collection systems as well as some of the more locally run programs that we unfortunately don't really hear much about because we're a bit far removed from them. I mentioned the retailer takebacks, so we're hoping that this model grows, and we're also hoping to see what results it might yield. Just to give you an example, so far, in 2007, Staples, the other large retailer, collected 1.7 million pounds of electronics through their takeback program, which I was really surprised, because I thought, you know, \$10 for a monitor, are people really going to pay that? So already having 1.7 million pounds collected is really, I think, remarkable for a program that it was uncertain how it was going to work. And that these kinds of programs really complement state and local programs. We need to figure out a way to really work together, and for the consumer, when they hear that message, when they hear what kinds of programs do they, what options do they have, that they understand, okay, I have more than one option, I have 4-5 options, and that it's not so disparate in the messaging. The final one that I'm really curious to see if it will work are the mailback programs. These are the programs where, as Mike mentioned, the Dell program, where you download a label, and you put it on a box, and you call up the shipping company, and you come and pick it up, in some instances, that might work great. There are a lot

of people that do shopping online, that are used to doing commerce via the computer, there are a lot of people that aren't comfortable with that, so we still have to see what the results of that will be, but again, when we're thinking about collection systems, whether it's a one-day event, whether it's ongoing, whether it's a retailer event, whether it's a partnership program, like what you see with Dell and Goodwill, or if it's a mailback, or other kinds of combinations, we really want to be flexible and to try to figure out what works best at a local level to help increase collection. So if you have any further questions, or if you want to try to see, can this work in Mexico? I know we were working, I just want to say thank you to Patricia Tovar who we really enjoyed working with, and we tried to do a collection event where we would get some of our industry partners to help support a local event, and we didn't quite get it together this time, but we're hoping to do it in the spring, and I'm looking forward to hear how that collection event went on Saturday, so thank you. So if anybody has any questions, please feel free to contact me, or I can take questions now.

[Spanish Male Speaker]

Gracias, buenas tardes.

Cuando se habla acerca de reciclaje obviamente tiene que existir ese valor que se le da al residuo para que deje de ser residuo y que sea un insumo, una materia prima para reciclarse, ¿no? En el caso de lo electrónico, uno de los valores más importantes son de los metales preciosos que se reciclan pero en porcentaje son un volumen mucho muy pequeño dentro de..., bueno, o del vidrio como se habla de los RT's, pero es un volumen muy pequeño y aun después de un proceso de reciclaje existe ahora sí un residuo que tendrá que irse a disposición final y esto implica costos muy altos, elevados. Entonces, mi pregunta es: para que esto funcione como un programa, como la empresa Good Will o un reciclaje de cualquier otra empresa, pues tiene que ser costeable, a fin de cuentas tiene que haber un mercado, tiene que tener una inversión, tiene que haber el recurso suficiente para reciclar, el proceso de reciclaje que a veces es muy caro, el caso de los celulares, tengo entendido que sólo alguna empresa no sé si en Noruega o de Finlandia por ahí hacen este tipo de reciclaje pero tiene que haber una inversión también para que el residuo que se genera después de que ese reciclaje se disponga adecuadamente. Entonces, la pregunta es: ¿dónde o cómo es negocio, cuando es negocio para las empresas que reciclan? porque puede ser una parte de la inversión de los 10 dólares que en un momento dado se cobran pero también creo yo, y en el caso de la empresa Good Will de que se habló hace un momento, pues también tiene que ser negocio para que haya una recuperación de todo este proceso. Entonces, insisto, si no hay un valor suficiente en el mercado para la recuperación de materiales reciclables y que estos se vuelvan a poner en el mercado, pues no va a ser negocio y nadie va a querer manejar este reciclamiento porque se habla mucho de reciclaje pero realmente, este, yo no sé si hasta ahorita es negocio, es costeable o no.

[Verena Radulovic]

Yo tengo las cosas en mi maleta, entonces yo entendí la pregunta pero no total. Entonces yo voy a tratar de contestarlo y si no he contestado usted me puede preguntar otra vez en inglés.

Ok, gracias.

[Verena Radulovic]

So I think he was asking how it's possible to make this more profitable, or particularly, when you have recycled, you receive the metal content, and you still have some plastics that you need to get rid of, so how do you make that more manageable? Was that roughly there? Okay. Well I think that might be a better question to ask the recyclers, because I'm, I would like to know the answer to that, too. I think if we can find the answer to that question, we'll be a lot better off, but I think, and you mentioned also cell phones, depending on the product stream, even though the precious metal content in that product are, is not that much, the resale value of the product in itself may, may be what's profitable, and which may be why, the reason why companies are not taking televisions, because they haven't been able to find that solution to be able to, where they would have to do a lot of the disposals, and they wouldn't be able to recoup their costs. How can you set these kinds of systems up so that you can ensure your costs, I think it's a matter of keeping the focus on what kinds of products you want to take back, having more strategic markets for your products, in the case of cell phones, at least in the U.S., there are a couple of recyclers where it's so profitable for them to resell the cell phones that the companies, like the carriers and the retailers that are offering these programs are also making some profit. So in those instances, I think it's because of the product, but I really would like to hear from, perhaps some of the presentations from some of the recyclers

in the room what they think the answer to that question might be, because I'm not entirely certain. Wait, let me get my...

[Spanish Male Speaker]

Gracias. Yo soy Elías Vanegas, y soy del Instituto Nacional de Recicladores, y le quiero preguntar lo siguiente: ¿tienen ustedes o ustedes establecieron un tabulador para la recogida de estos aparatos? O sea, los monitores..., dicen que tienen un costo de recuperación de 10 dólares unos, otros \$30, \$35. ¿Cómo le establecieron eso?

[Verena Radulovic]

The prices were really set by the retailers that were developing those programs. What happened was the retailers decided, must have decided that, with the shipping costs and the amount that the recycler would charge them to actually take this material, that in order for the program to at least be cost neutral, because a lot of companies will say, okay, we won't make a revenue on it, but we'll be a good citizen, and we'll show the community that we're environmentally friendly, at the very least, make this a cost neutral program, that must have been the minimum amount that they would need to charge. It's possible that they want also to have a revenue stream. I think in my last presentation, "Do people not give you information?" That is very difficult information for us to get from those that are developing a program. So while I'm telling people about these programs and how great they are, there are details that I just can't get from the companies that are developing them, mostly, I think, to protect their business interests, but it's a mystery as to why it's that amount, and it'll be interesting to see if that amount goes down, so if more people are participating, and you have higher volumes, and the recycler is able to generate more income from that, will the costs go down? Or, if we talk about reverse distribution systems, if there's a way that the material can go to one location, and the transportation costs can go down, so you're not running the trucks back and forth as often, or you can fill up the truck more, then will the costs go down? So I may have a better answer for you in about two years to see how that works.

Thank you.